

Washington Rural Health Assessment Project

Maternal and Infant Health

Summary

Addressing maternal and infant health issues in rural communities presents many challenges. Women and families in rural communities often experience poverty, inadequate supply and distribution of obstetric and pediatric providers, and lack of transportation—all of which affect health status and access to care.

The populations of women of childbearing age (15-44) and of infants in Washington are generally growing more slowly in rural areas than in urban communities. From 1990 to 2000, the number of Washington women of childbearing age increased 12.7% while the number of infants increased 20.6%. A comparison of data from this period shows that the population of women of childbearing age grew fastest in urban fringe areas (36.8%) and experienced negative growth (-7.8%) in small town rural areas. The population of Washington infants grew fastest in urban fringe areas (47.6%), while little growth occurred in small town rural areas (0.6%). Much of the increase in the maternal and infant population in Washington is due to in-migration as the number of births in Washington essentially stayed the same during 1990-2000.

A comparison of rural areas at the subcounty level using the Rural Urban Commuting Areas (RUCA) codes shows that in 2000, urban core areas had the highest proportion of women of childbearing age (22.8%), and small town rural areas, the lowest (17.9%). The proportion of infants in rural and urban areas is consistent across the state.

Subcounty analyses of health indicators show that, compared with women in urban areas, women who live in Washington's rural communities are less likely to begin prenatal care in the first trimester of pregnancy. There do not appear to be statistically significant differences in the rates of infant mortality or low birth weight births across Washington's rural and urban areas. Data show that women in rural communities are more likely to smoke during pregnancy, a practice associated with poor birth outcomes.

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The Maternal and Infant Population in Rural Washington

Women of childbearing age (ages 15-44) accounted for 22% of the Washington State population in 2000. From 1990 to 2000, the number of women of childbearing age in the state increased 12.7%. Ten of twenty-eight predominantly rural Washington counties reported growth rates for this population of women greater than the state rate, and 18 had growth rates less than the state rate.

Table 1: Population of Women of Childbearing Age in Selected Washington Rural Counties

County	1990 Population of women 15-44	2000 Population of women 15-44	Numeric change	Percent change	2000 Women 15-44 as percent of county population
Counties with growth rates greater than the state rate					
Grant	11,285	15,231	3,946	35.0%	20.4%
Mason	7,121	8,784	1,663	23.4%	17.8%
Skagit	16,873	20,677	3,804	22.5%	20.1%
Chelan	10,885	13,268	2,383	21.9%	19.9%
Kittitas	6,869	8,311	1,442	21.0%	24.9%
Douglas	5,631	6,770	1,139	20.2%	20.8%
Adams	2,774	3,306	532	19.2%	20.1%
Pend Oreille	1,768	2,089	321	18.2%	17.8%
Stevens	6,472	7,505	1,033	16.0%	18.7%
Asotin	3,760	4,262	502	13.4%	20.7%
Counties with growth rates less than the state rate					
Okanogan	6,648	7,484	836	12.6%	18.9%
Skamania	1,783	2,003	220	12.3%	20.3%
Island	12,501	13,967	1,466	11.7%	19.5%
Lincoln	1,563	1,741	178	11.4%	17.1%
Walla Walla	1,0268	11,297	1,029	10.0%	20.5%
Wahkiakum	591	637	46	7.8%	16.7%
San Juan	1,902	2,024	122	6.4%	14.4%
Whitman	11,268	11,970	702	6.2%	29.4%
Lewis	12,141	12,884	743	6.1%	18.8%
Garfield	380	403	23	6.1%	16.8%
Jefferson	3,828	4,002	174	4.5%	15.4%
Cowlitz	17,999	18,684	685	3.8%	20.1%
Klickitat	3,472	3,541	69	2.0%	18.5%
Ferry	1,312	1,331	19	1.4%	18.3%
Clallam	10,608	10,597	-11	-0.1%	16.4%
Grays Harbor	13,175	12,786	-389	-3.0%	19.0%
Pacific	3,329	3,226	-103	-3.1%	15.4%
Columbia	741	697	-44	-5.9%	17.2%

Source: U.S. Census Bureau

Infants accounted for 1.3% of the Washington State population in 2000. From 1990 to 2000, the number of infants in Washington increased 20.6%. Fourteen of twenty-eight rural Washington counties had growth rates greater than the state rate for infants, as shown in the following table.

Table 2: Population of Infants in Selected Washington Rural Counties

County	1990 Population age <1	2000 Population age <1	Numeric change	Percent change	2000 Percent of county population
Counties with growth rates greater than the state rate					
Chelan	631	998	367	58.2%	1.5%
Adams	247	369	122	49.4%	2.2%
Klickitat	174	255	81	46.6%	1.3%
Grant	817	1,183	366	44.8%	1.6%
Skamania	123	173	50	40.7%	1.8%
Okanogan	374	517	143	38.2%	1.3%
Walla Walla	441	605	164	37.2%	1.1%
Lincoln	85	115	30	35.3%	1.1%
Pend Oreille	105	140	35	33.3%	1.2%
Douglas	368	488	120	32.6%	1.5%
Mason	388	505	117	30.2%	1.0%
Wahkiakum	27	35	8	29.6%	0.9%
Lewis	768	990	222	28.9%	1.4%
Garfield	18	22	4	22.2%	0.9%
Counties with growth rates less than the state rate					
Kittitas	312	376	64	20.5%	1.1%
Skagit	956	1,152	196	20.5%	1.1%
Cowlitz	1,190	1,364	174	14.6%	1.5%
San Juan	84	92	8	9.5%	0.7%
Whitman	330	350	20	6.1%	0.9%
Grays Harbor	807	841	34	4.2%	1.3%
Clallam	661	683	22	3.3%	1.1%
Island	868	894	26	3.0%	1.2%
Ferry	68	70	2	2.9%	1.0%
Stevens	426	432	6	1.4%	1.1%
Asotin	265	260	-5	-1.9%	1.3%
Pacific	176	155	-21	-11.9%	0.7%
Columbia	61	45	-16	-26.2%	1.1%
Jefferson	185	133	-52	-28.1%	0.5%

Source: U.S. Census Bureau

A comparison of rural areas at the subcounty level using the RUCA codes shows that in 2000, Washington's urban core areas had the highest proportion of women of childbearing age (22.8%) and small town rural areas the lowest (17.9%). The relatively lower share in rural areas affects access to services and providers, in particular to obstetric and pediatric providers. The following table shows the difference across groups of Census tracts.

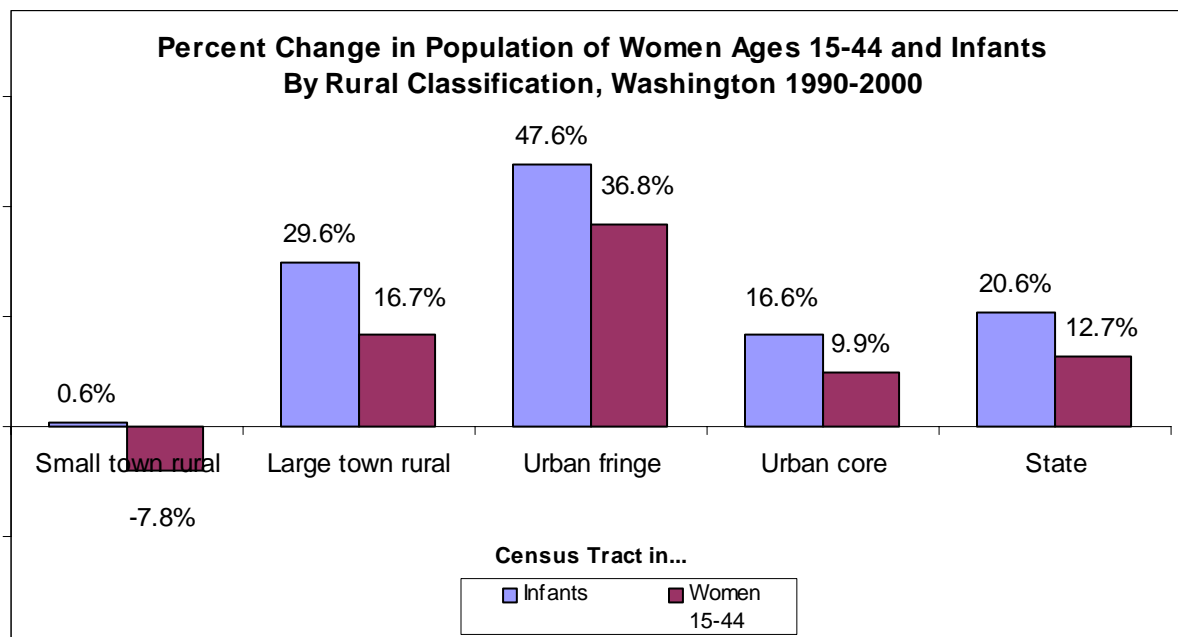
Table 3: Percent Population Women of Childbearing Age and Infants by RUCA Code

Percent of population	State total	Rural Urban Commuting Areas (RUCA) Census Tracts in:			
		Small town rural	Large town rural	Urban fringe	Urban core
Women of childbearing age (15-44)	22.0%	17.9%	21.0%	21.0%	22.8%
Infants	1.3%	1.2%	1.3%	1.3%	1.3%

Source: U.S. Census Bureau

A comparison of subcounty data from 1990-2000 shows that the share of women of childbearing age grew fastest in urban fringe areas (36.8%), while small town rural areas reported negative growth (-7.8%). The population of Washington infants grew fastest in urban fringe areas (47.6%), and little growth occurred in small town rural areas (0.6%).

Chart 1: Change in Population of Women of Childbearing Age and Infants from 1990 to 2000



Source: U.S. Census Bureau

Key Health Indicators ⁱⁱⁱ

The health of the maternal and infant population is a critical indicator of the health status of our communities. Health status, in turn, is influenced by such factors as poverty and access to quality services and health care. Poverty rates in rural Washington counties remain persistently higher in small town rural and large town counties than in urban counties.ⁱⁱⁱ Additionally, poor local access to obstetric providers has been shown to increase the risk of poor birth outcomes for both publicly and privately insured women.^{iv} One way to address poor access is through perinatal regionalization. Since the early 1970s, the Washington State Department of Health has contracted with tertiary level perinatal referral centers to provide regionalized services for pregnant women and newborns. Perinatal regionalization works to mitigate poor birth outcomes by identifying pregnant women and newborns at risk (especially preterm and low birthweight newborns), promoting care in a hospital setting appropriate to the level of risk, providing clinical education and consultation, and facilitating transport from the referring hospital to the regional perinatal center when necessary to optimize patient care and outcome.

Infant Mortality

In 2001, Washington's infant mortality rate (IMR) was 5.8 per 1,000 live births, compared with a national IMR of 6.8 per 1,000.^v The national Healthy People 2010 objective is an IMR of no more than 4.5 per 1,000 live births.^{vi} Maternal health, quality of and access to health care, and socioeconomic conditions all affect infant mortality. Specific risk factors for infant mortality include smoking and alcohol use during pregnancy, preterm birth, low birth weight (LBW), and lack of early prenatal care (PNC). During 1999-2001, infant mortality rates were lowest in Washington's urban fringe areas, although there was no statistically significant difference in infant mortality between any of the RUCA-coded areas.

Table 4: Infant Mortality Rates per 1,000 Live Births By Rural or Urban Residence, Washington, 1999-2001	
Small town rural	5.4
Large town rural	5.1
Urban fringe	4.6
Urban core	5.4
State	5.4

Low Birth weight

LBW, or infant birth weight of less than 2,500 grams (5 pounds, 8 ounces), is a major contributor to infant mortality and morbidity and is associated with cerebral palsy, deafness, blindness, childhood respiratory problems, and seizure disorders.^{vi} Since 1995, both the state and national LBW rates have gradually increased. The Washington LBW rate for 2001 was 5.8%, compared with a national rate of 7.7 %.^{vii} The national Healthy People 2010 objective is to limit LBW births to no more than 5.0% of live births.^{vi} Risk factors for LBW include preterm birth, smoking and substance use during pregnancy, maternal age of younger than 18 or older than 40, and poor maternal health. According to birth certificate data from 1999-2001, the highest LBW rates in Washington were in the urban core and in small town rural areas, although the differences were not statistically significant.

Table 5: Percent Low Birthweight Births By Rural or Urban Residence, Washington, 1999-2001	
Small town rural	5.6
Large town rural	5.2
Urban fringe	5.1
Urban core	6.0
State	5.8

(Overall Missing/ Unknown =0.7%)

First Trimester Prenatal Care

Early and comprehensive PNC is vital to improved maternal health and birth outcomes. In 2001, 83.2% of Washington women with a live birth entered prenatal care in the first trimester, compared with a 83.4% national rate.^{vii} The Healthy People 2010 objective is that 90% of women with a live birth enter PNC in the first trimester.^{vi} From 1999-2001, women with live births who lived in Washington's small town rural areas were significantly less likely to enter into PNC in the first trimester compared with pregnant women from more urban areas.

Table 6: Percent Live Births with First Trimester Prenatal Care By Rural or Urban Residence, Washington, 1999-2001	
Small town rural	77.5
Large town rural	79.5
Urban fringe	83.4
Urban core	83.8
State	82.9

(Overall Missing/ Unknown =8.5%)

Smoking during Pregnancy

Smoking during pregnancy is associated with an increased risk for LBW births, preterm labor, Sudden Infant Death Syndrome (SIDS), and fetal and infant death. Smoking accounts for 20% of LBW deliveries.^{vi} In 2001, 12.6% of Washington women with a live birth smoked during their pregnancy, compared to 12.0% of mothers nationally.^{vii} The Healthy People 2010 objective is that 99% of women with a live birth abstain from smoking during pregnancy.^{vi} Based on birth certificate data, a significantly higher proportion of women in small town rural areas smoked during pregnancy than women in more urban or large town counties.

Table 7: Percent Live Births for which Mother Smoked During Pregnancy By Rural or Urban Residence, Washington, 1999-2001	
Small town rural	16.8
Large town rural	12.9
Urban fringe	13.8
Urban core	13.2
State	13.5

(Overall Missing/ Unknown =4.5%)

What the Washington State Department of Health is doing to improve maternal and infant health in rural communities:

- ⇒ Residents of all Washington counties, regardless of population size, receive base-level maternal and child health (MCH) services through programs administered by local public health jurisdictions (LHJs).
- ⇒ Rural counties receive base level maternal and child health (MCH) funding regardless of population size to provide basic infrastructure for local health department MCH programs.
- ⇒ All rural counties have Maternity Support Services (MSS) agencies that provide health education, linkages, and interventions to low-income pregnant and post-pregnant women and access to perinatal regional programs for obstetrical and neonatal high-risk consultation, referrals, and medical education.
- ⇒ Smoking cessation initiatives include an MSS performance measure that requires MSS agencies to document that each client is asked about tobacco use and secondhand smoke exposure and is offered an appropriate and individualized intervention. Effective January 2002, the state Medicaid program added a smoking cessation counseling and pharmacotherapy (Zyban) benefit for all pregnant women on Medicaid.
- ⇒ The Department of Health monitors access to prenatal care and is exploring collaborative efforts to track availability of obstetrical care in rural and other areas within the state.
- ⇒ Quality improvement activities include dissemination of prenatal best practice guidelines for areas such as substance abuse, smoking cessation, domestic violence screening and referral, and HIV infection management.
- ⇒ The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) serves Washington infants and children up to age five and pregnant and breastfeeding women at or below 185% of the federal poverty level or enrolled in Medicaid *and* who are nutritionally at-risk as verified by a health professional. WIC provides nutrition education, breastfeeding support, healthy food and referrals to health and social agencies. Sixty-seven agencies—including health

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departments, migrant and tribal agencies, and community-based organizations— contract to provide WIC services at 235 sites statewide.	
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ENDNOTES:

ⁱ Washington state death certificate data: Vital Statistics 2001, Washington State Department of Health, Center for Health Statistics, December 2002.

ⁱⁱ Washington state birth certificate data: Vital Statistics 2001, Washington State Department of Health, Center for Health Statistics, December 2002.

ⁱⁱⁱ Washington Rural Health Assessment Project: Economic Indicators, 2003.

^{iv} Nesbitt T, Larson E, Rosenblatt R, Hart G. Access to maternity care in rural Washington: its' effect on neonatal outcomes and resource use. *American Journal of Public Health* January 1997; 87(1):85-90.

^v National Vital Statistics Reports, Vol. 52, No. 3, September 18, 2003.

^{vi} U.S. Department of Health and Human Services. *Healthy People 2010*, Washington, D.C., January 2000.

^{vii} National Vital Statistics Reports, Vol. 51, No. 2, December 18, 2002